

WEST PENN BRIDGE
(South Railroad Bridge)
Pennsylvania Railroad, spanning
Allegheny River
Pittsburgh
Allegheny County
Pennsylvania

HAER No. PA-443

HAER
PA
2-PITBU
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Northeast Region
U.S. Custom House
200 Chestnut Street
Philadelphia, PA 19106

HAER
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HISTORIC AMERICAN ENGINEERING RECORD

WEST PENN BRIDGE (SOUTH RAILROAD BRIDGE)

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Location: Pennsylvania Railroad, spanning Allegheny River
Pittsburgh
Allegheny County, Pennsylvania
UTM: East 17.586420.4479120
West 17.586150.4479090
Quad: Pittsburgh East, PR1979 1:24,000

Date of Construction: 1890, 1903

Builder: Pennsylvania Railroad

Present Owner: Urban Redevelopment Authority of Pittsburgh (URA)
Present Use: Not in use

Significance: Built to provide railroad access to Washington's Landing (formerly Herr's Island), the South Railroad Bridge has become a signature bridge in the City of Pittsburgh. The elegant double intersection Pratt truss frames a dramatic view of the City of Pittsburgh and the Allegheny River.

Project Information: The URA has undertaken a redevelopment project on Washington's Landing requiring pedestrian access from the north shore of the Allegheny River to the island. The existing Three Rivers Heritage Trail, a hiking and biking trail, connects Three Rivers Stadium along the north shore of the Allegheny River to a point opposite Washington's Landing. A similar hiking and biking trail and other recreational facilities are present on the island. The rehabilitation of the South Railroad Bridge is the most practical and expedient manner of connecting these two sections of the City trail system.

Christine Davis
Christine Davis Consultants, Inc.
560 Penn Street
Verona, PA 15147

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The South Railroad Bridge spans a back channel of the Allegheny River in the City of Pittsburgh, Pennsylvania. The bridge was built in 1890 to connect the mainline of the Western Pennsylvania Railroad (West Penn) with Herr's Island. In 1861, the West Penn had purchased the abandoned Pennsylvania Canal right-of-way along the shore of the Allegheny River. Within the next five years, the West Penn used this right-of-way to construct a railroad between Blairsville, Pennsylvania and Allegheny City, now Pittsburgh's North Side. In 1871, the West Penn extended its line north to Butler County and east to Bolivar in Westmoreland County.¹ The Pennsylvania Company leased the rail line and guaranteed the principle and interest of the bonds of the West Penn Company.²

In 1881, Allegheny City granted the West Penn Railroad a right-of-way across the back channel of the Allegheny River at the upper or northern end of Herr's Island as part of a railroad loop around the island.³ At that time, the oil industry dominated the island.⁴ By 1887, the West Penn had expanded their facilities on the island by adding new tracks to more efficiently serve the island's industries.⁵ At this time, the Pittsburgh Provision Company submitted plans to enlarge their facilities on the island, the company contacted the West Penn to request a connection with the mainline. The connection was made by purchase and condemnation resulting in the construction of the South Railroad Bridge across the south end of the island. The West Penn selected a double intersection Pratt truss for the South Railroad Bridge. This truss type, also known as the Whipple, Whipple-Murphy or Linville truss, involves the addition of diagonals to the original Pratt truss form. The diagonals extend across two panels while retaining the parallel top and bottom chords of the Pratt truss. The double intersection truss was patented in 1847 by Squire Whipple and modified slightly by the addition of crossing diagonals in 1863. Typically, the Pratt truss has end posts, but there is no evidence for the attachment of end posts on the South Railroad Bridge.

The South Railroad Bridge was the second double intersection Pratt truss bridge to connect Herr's Island with the shore. The first structure provided roadway access to the island and was fabricated by the Pittsburgh Bridge Company in 1883, a year after an earlier bridge washed away during the Flood of 1882.⁶ The South Railroad Bridge possesses similarities to this 1883 bridge and was likely built by the same bridge company.

On April 1, 1903, the Pennsylvania Railroad Company acquired the 85-mile West Penn Railroad and five other branch lines.⁷ The Pennsylvania Railroad consolidated their East Liberty Stock Yards and several smaller livestock markets to establish the Union Stock Yards on Herr's Island. The yards ranked sixth in the nation for the number of livestock handled through a railroad facility. The Union Stock Yards served livestock trains traveling from Chicago to New York and Philadelphia in response to a new Federal law requiring railroad companies to provide a rest stop for animals transported over the rail system. Under this law, animals had to be unloaded, fed and watered every 36 hours and rested for eight hours before resuming the trip.⁸

After owning the West Penn Railroad for only five months, the Pennsylvania Railroad prepared plans on September 11, 1903 to rebuild the existing South Railroad Bridge to Herr's Island for a cost of \$150,000. A second bridge at the north end of the island was under construction at the same time.⁹ The need for the bridge rehabilitation project was the increase in the original elevation of Herr's Island due to the dumping of fill and refuse on the island's surface.¹⁰ As a

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result, new bridge abutments and piers were required to raise the level of the South Railroad Bridge. These concrete wing abutments anchor the bridge to the island while concrete piers carry the bridge over the back channel, the Baltimore and Ohio Railroad (B&O) and River Road. At this time, the original curved brick viaduct between River Avenue and the mainline also was capped with concrete to increase the structure's height. Plate girder sections connected the viaduct to the mainline and to the Pratt truss. This bridge rehabilitation can be noted in a comparison of archival maps published in 1907 and 1910.¹¹

Today, the South Railroad Bridge spans the back channel of the Allegheny River, River Avenue, and the former (B&O), now CONRAIL. The four-spans of South Railroad Bridge include the pin-connected, double intersection Pratt truss and three plate girders. The Pratt truss measures 58.5 meters (64 feet) in length and 6 meters (20 feet) in width. Two plate girders bracket the truss. The girder from the truss to the island measures 19.5 meters (64 feet) in length and is 6 meters (20 feet) wide. The second girder measures 56 meters (183 feet) in length and is 6 meters (20 feet wide). The third plate girder joins the brick viaduct to the railroad's main line. This girder measures 80 meters (263 feet) in length and 6 meters (20 feet) in width. The deck of the metal truss once had a double-track system of steel rails separated by a cribbing of railroad ties. The rails have been removed. The deteriorated wood deck was recently damaged when vandals set fire to the south side of the deck. The concrete abutment for the plate girder section over River Avenue is in very poor condition having sustained damage during a vehicular accident. A curved red brick viaduct connects the truss with the railroad's mainline. Openings in the viaduct provided access points for industrial buildings that once occupied the lots bracketing the viaduct. A brick wall on the north side of the viaduct is incorporated into the South Railroad Bridge's abutment with concrete. The concrete is in poor condition and a deep fracture occurs at the point of connection between the brick wall and the viaduct. Concrete has been used to raise the level of the tracks.

Located on River Road beneath the South Railroad Bridge is a small stone abutment, all that remains of a former railroad siding used to connect two industrial buildings with the B&O's mainline. Neither the buildings nor the siding are extant. The abutment measures 1.8 meters (6 feet) by 4.6 meters (15 feet) in length.

On CONRAIL's right-of-way at the approach to the South Railroad Bridge is a rare railroad artifact, a "tattletale", used by the train's brakemen who once rode on the train's roof. The tattletale warned brakemen of an impending low bridge or abutment and was used until the 1960s when two events rendered the tattletale obsolete. First, the International Commerce Commission (ICC) ruled against personnel riding on the top of train cars and second, after improved technology in the communication system and brakes, the brakeman no longer was required to ride the roof. The artifact is the only known example within a one hundred-mile radius of Pittsburgh.

SIGNIFICANCE

Built as a railroad bridge to access Herr's Island, the South Railroad Bridge has become a signature bridge in the City of Pittsburgh, having been featured in a 1974 publication on North

American bridges ¹³ and in a three-part series about Pittsburgh published by Fortune Magazine in August of 1967. This elegant iron and steel truss bridge frames a dramatic view of the City of Pittsburgh from Herr's Island. The bridge is significant under National Register Criterion C for the significant engineering characteristics evident in the double intersection Pratt truss, plate girders, concrete and stone abutments, and brick viaduct.

REPOSITORIES

Records housed in the following repositories were used in the preparation of this document: the Library of Congress, the Carnegie Library of Pittsburgh, the University of Pittsburgh's Hillman Library, the Pattee Library of the Pennsylvania State University, the Pennsylvania State Archives, and the files of the Urban Redevelopment Authority of Pittsburgh (URA). Although a series of original drawings for the 1883 roadway bridge to Herr's Island were found in the URA's collection, no original drawings or historic photographs of the South Railroad Bridge were found, presumably because the structure was a railroad bridge. Archives for the Western Pennsylvania Railroad Company were examined in the Pennsylvania Archives, Record Group MG 286. No photographs or drawings of the bridge were found in this collection. The Pittsburgh Photographer's collection housed at the Archives of Industrial Society could not be accessed during this study due to a change in personnel but it is possible that photographs may exist in the collection.

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2. Schotter, H.W. The Growth and Development of the Pennsylvania Railroad Company. Allen Lane and Scott, Philadelphia, 1927. p. 63, 88.
3. City of Allegheny. Annual Reports of the Various Officers and Standing Committees of the City of Allegheny, 1881.
4. Herr, Fred R. Herr's Island. The Western Pennsylvania Historical Magazine, 53 (3), 1970, p. 214.
5. Western Pennsylvania Railroad. *Western Pennsylvania Railroad Minute Book, 1887*. Pennsylvania Archives, MG 286.
6. Pittsburgh Bridge Company. "Cross Section of Floor, Herr's Island Bridge", 1883. Drawing on File in City of Pittsburgh Department of Engineering and Construction.

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7. Schotter, H.W. 1927.
8. Herr, Fred R. 1970, p. 215.

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9. Anonymous. "Notes." The Railway Age. September 11, 1903, p. 345.
10. Davis, Christine, et.al. 1988.
11. Hopkins, G.M. and Company. Atlas of Greater Pittsburgh, Pennsylvania. G.M. Hopkins & Company, 1907.

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12. Metzger, William. Personal interview on July 28, 1997 in Pittsburgh, Pennsylvania.
13. Plowden, David. Bridges: The Spans of North America. Viking Press, New York, 1974.

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SE Technologies Inc.

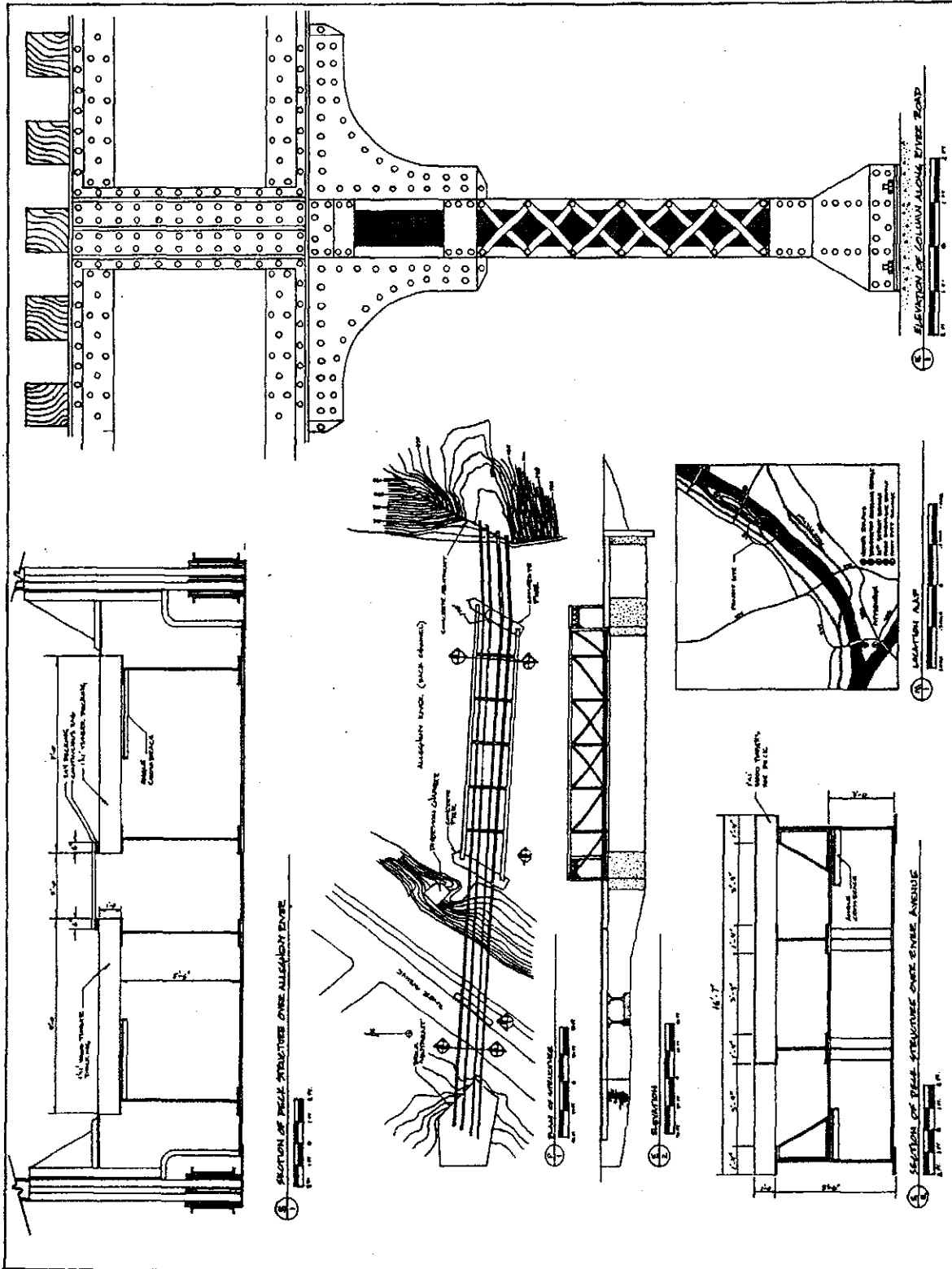
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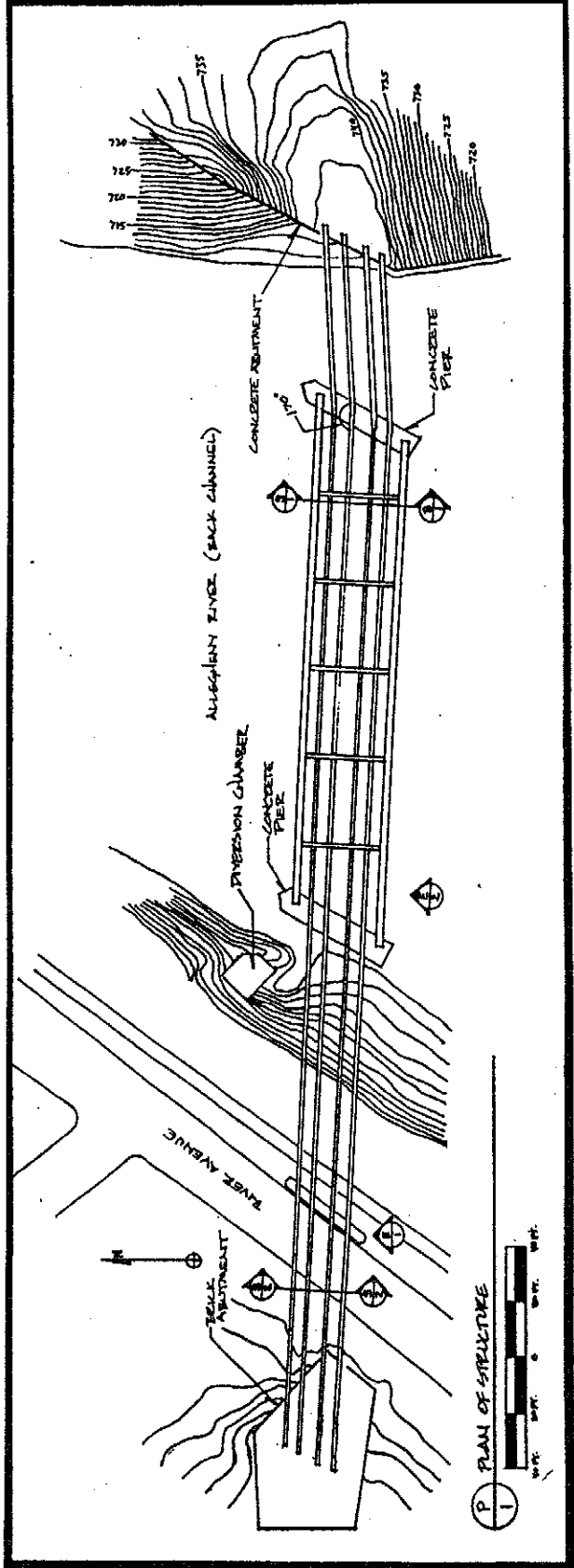
1903

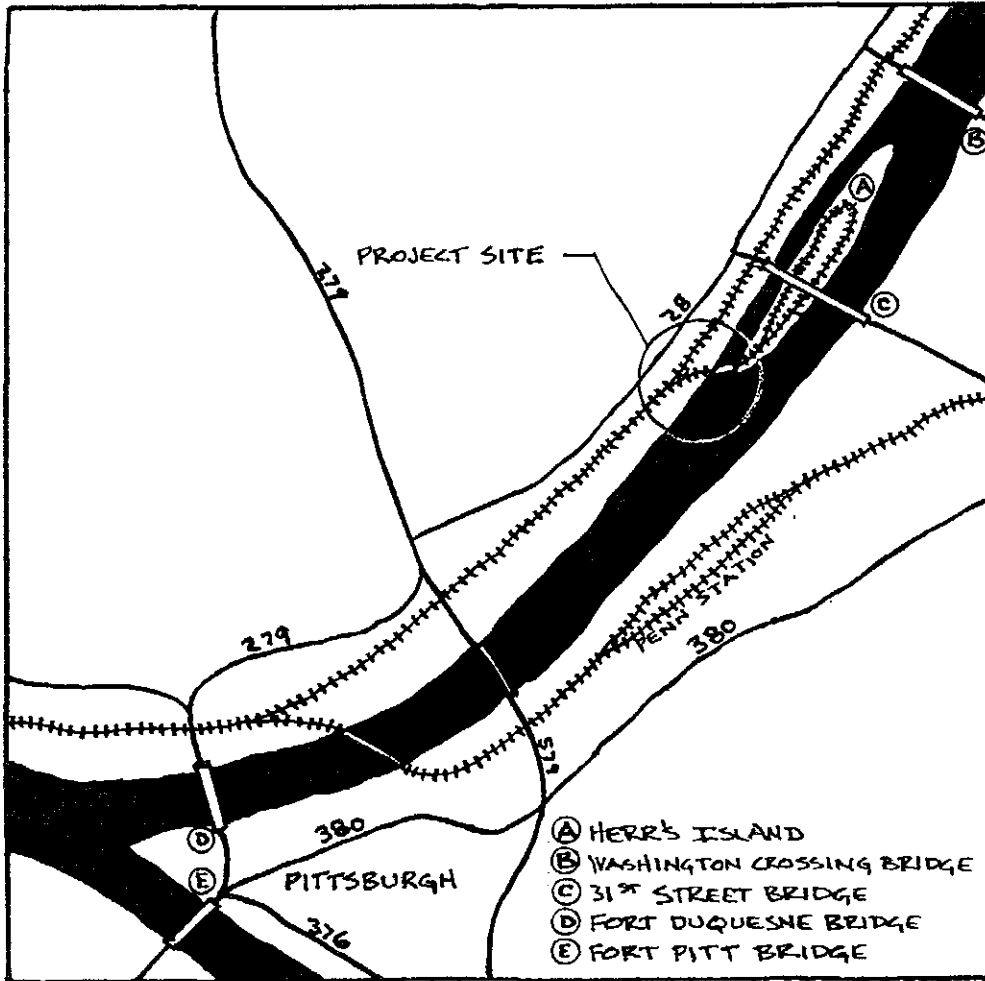
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ALLEGHENY COUNTY, PENNSYLVANIA
 HISTORIC AMERICAN ENGINEERING RECORD # PA-443
 SOUTH RAILROAD BRIDGE (WEST PENN RAILROAD, HERE'S ISLAND BRIDGE)
 AUGUST 1997
 CHRISTINE DAVIS CONSULTANTS, INC.

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LOCATION MAP

